of ascorbic acid is as follows: At the proper time, exactly 1 cc. of culture is removed, and mixed with approximately 1 cc. of glacial acetic acid to arrest growth. An equal amount of control uninoculated broth is treated in exactly the same manner. Each solution is then made up to precisely 50 cc. with distilled water. The most direct way is to place the culture (1 cc.) in a 50 cc. volumetric flask, add the acetic acid, then make up to the 50 cc. mark with water. Two aliquots, of 1 cc. each, are taken for analysis by titration against a freshly prepared, standardized solution of 2:6 dichlorophenolindophenol dye of which each cubic centimeter is equivalent to 0.02 mg. ascorbic acid. The end point for the titration is the first appearance of a faint, but distinct bluish color. From the amount of ascorbic acid medium required to elicit this color, it is a very simple matter to calculate the amount of ascorbic broth in the solution. It is good practice to repeat the determination of ascorbic acid upon a sample which has been saturated with H_2S prior to titration, thereby changing any reversibly oxidized ascorbic acid to the fully reduced, and titratable condition, and thus acting as an additional check on the decomposition of the substance by the bacteria.

9720 P

Pathogenesis of Arterial Hypertension in Coarctation of the Aorta.

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Experiments on albino rats show that the hypertension in coarctation of the aorta has the same pathogenesis as the hypertension in a Goldblatt dog (partial constriction of a renal artery). The criterion of hypertension was the presence of cardiac hypertrophy estimated in relation to body weight (left ventricle more than right) in non-anemic rats sacrificed 20 days after operation. Blood urea concentrations were normal and proteinuria was not increased over the control levels.

The experimental procedure consisted in a modification of Collins'[1] technique. The left renal artery was tied together with a wire 0.4 mm. diameter, or the aorta with a wire 0.9 mm. diameter; after tying, the wire was removed but the ligature left in place.

[1] Collins, D. A., *Am. J. Physiol.*, 1936, **116**, 616.

Such partial occlusion of the left renal artery was followed by cardiac hypertrophy (average +28%) in 9 rats. When there was simultaneous left nephrectomy there was of course no hypertrophy (+2%) in 14 rats.

Partial occlusion of the aorta between the kidneys resulted in cardiac hypertrophy in 7 rats (+26%); but when left (distal) nephrectomy was done simultaneously, cardiac hypertrophy failed to occur (—2%) in any of 25 rats. In some cases the occlusion had become complete, assurance that the ligature was sufficiently tight.

Finally, partial occlusion of the aorta above both kidneys resulted in cardiac hypertrophy (+20%) in 12 rats. This situation is analogous to that existing in coarctation of the aorta.

Conclusions. Partial (or even complete) occlusion of the aorta in rats produces hypertension only if there is living renal tissue distal to the occlusion, just as there must be a kidney beyond a partially occluded renal artery in order to produce hypertension in a Goldblatt dog. The same degree of mechanical obstruction due to stenosis of the aorta and the presence of a collateral bed never results in hypertension when all of the renal tissue is above the site of occlusion.

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Study of Some Variables Affecting the Prothrombin Time.*

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Of the 4 substances in the plasma (calcium, fibrinogen, thromboplastin and prothrombin) only 2, calcium and fibrinogen, can be estimated quantitatively. Since thromboplastin is derived presumably from platelets, estimations of the number and fragility of platelets are considered to be adequate tests for determining the presence of sufficient thromboplastic substance. Although prothrombin can be isolated from the blood in relatively pure form, the methods for its isolation are not adaptable to a study of fluctuations under pathologic and experimental conditions. Therefore, in determining the amount of prothrombin in a sample, it has been necessary to use methods of bioassay which depend upon a

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